(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 382 036 A3**

(12) EUROPEAN PATENT APPLICATION

(21) Application number: **90101687.3**

(22) Date of filing: **29.01.90**

(51) Int. Cl.[5] **C30B 25/02**, C30B 29/40, C30B 29/48

(30) Priority: **06.02.89 US 306600**

(43) Date of publication of application:
16.08.90 Bulletin 90/33

(84) Designated Contracting States:
DE FR GB IT

(88) Date of deferred publication of the search report:
23.01.91 Bulletin 91/04

(71) Applicant: **MOTOROLA INC.**
1303 East Algonquin Road
Schaumburg Illinois 60196(US)

(72) Inventor: **Johnson, Eric S.**
9819 N 68th Street
Scottsdale, Arizona 85253(US)

(74) Representative: **Dunlop, Hugh Christopher et al**
Motorola European Intellectual Property Operations Jays Close Viables Industrial Estate
Basingstoke, Hampshire RG22 4PD(GB)

(54) Epitaxial film growth using low pressure MOCVD.

(57) A method for growing high quality epitaxial films using low pressure MOCVD that includes providing a substrate that is misoriented from a singular plane, placing the substrate into an MOCVD reactor at a total pressure of less than 0.2 atmospheres and then growing an epitaxial film on the substrate. When providing a misoriented gallium arsenide substrate, the MOCVD reactor is set at a temperature in the range of 650 to 750 degrees centigrade to grow an aluminum gallium arsenide film. This temperature is substantially lower than that at which aluminum gallium arsenide epitaxial films are commonly grown and the resulting film has a smooth surface morphology and enhanced photoluminesence properties.

EP 0 382 036 A3

European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 90 10 1687

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	JOURNAL OF CRYSTAL GROWTH, vol. 88, no. 1, April 1988, pages 53-66; E.S. JOHNSON et al.: "Critical misorientation morphology in AlGaAs and GaAs grown by atmospheric-pressure MOCVD on misoriented substrates" * Abstract; figure 10 *	1	

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

C 30 B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	09-11-1990	GREGG N.R.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P0401)